

# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 089498-0483	<b>FOR FURTHER ACTION</b>	see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.
International application No. PCT/US04/15046	International filing date ( <i>day/month/year</i> ) 13 May 2004 (13.05.2004)	(Earliest) Priority Date ( <i>day/month/year</i> ) 25 June 2003 (25.06.2003)
Applicant THE UNIVERSITY OF AKRON		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.



It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the Report**

a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing:

contained in the international application in written form.

filed together with the international application in computer readable form.

furnished subsequently to this Authority in written form.

furnished subsequently to this Authority in computer readable form.

the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

2.  Certain claims were found unsearchable (See Box I).

3.  Unity of invention is lacking (See Box II).

4. With regard to the title,

the text is approved as submitted by the applicant.

the text has been established by this Authority to read as follows:

5. With regard to the abstract,

the text is approved as submitted by the applicant.

the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No. 1

as suggested by the applicant.

because the applicant failed to suggest a figure.

because this figure better characterizes the invention.

None of the figures

**Box III TEXT OF THE ABSTRACT (Continuation of Item 5 of the first sheet)**

The technical features mentioned in the abstract do not include a reference sign between parentheses (PCT Rule 8.1(d)).

The abstract is too long (PCT Rule 8.1(b)). The abstract must be less than 150 words, or 200 words when no figure is to be published.

**NEW ABSTRACT**

A multi-energy polarization imaging method consisting of a multi-fusion, dual-rotating retarder/multiple-energy complete Mueller matrix-based polarimeter and dual-energy capabilities. The system includes a light source (14) for illuminating a target (18) with a first quantity of light having a first wavelength and a second quantity of light having a second wavelength, the first and second wavelength being different. A polarization-state generator (22) generates a polarization state for each of the first and second quantities of light, and includes a first polarizer (26) through which the first and second quantities of light are transmitted before entering a first waveplate (32). A polarization-state receiver (44) evaluates a resulting polarization state of the first and second quantities of light following illumination of the target (18), the polarization-state receiver (44) including a second waveplate (48) through which the first and second quantities of light are transmitted before entering a second polarizer (51). An optical image-capture device captures a first image of the target illuminated by the first quantity of light and a second image of the target illuminated by the second quantity of light. A processing unit assigns a weighting factor to at least one of the first and second images and evaluates a weighted difference between the first and second images to generate a multi-energy image of the target (18).

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/15046

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : G01J 4/00  
US CL : 356/369

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
U.S. : 356/369

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
USPTO EAST

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,788,632 A (Pezzaniti et al) 04 August 1998 (04.07.1998), see entire document.	1-8,12-17 ----- 9-11,18
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Y		

Further documents are listed in the continuation of Box C.

See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"T"

later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"E" earlier application or patent published on or after the international filing date

"X"

document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"Y"

document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"O" document referring to an oral disclosure, use, exhibition or other means

"&"

document member of the same patent family

"P" document published prior to the international filing date but later than the priority date claimed

Date of the actual completion of the international search

29 March 2005 (29.03.2005)

Date of mailing of the international search report

30 JUN 2005

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